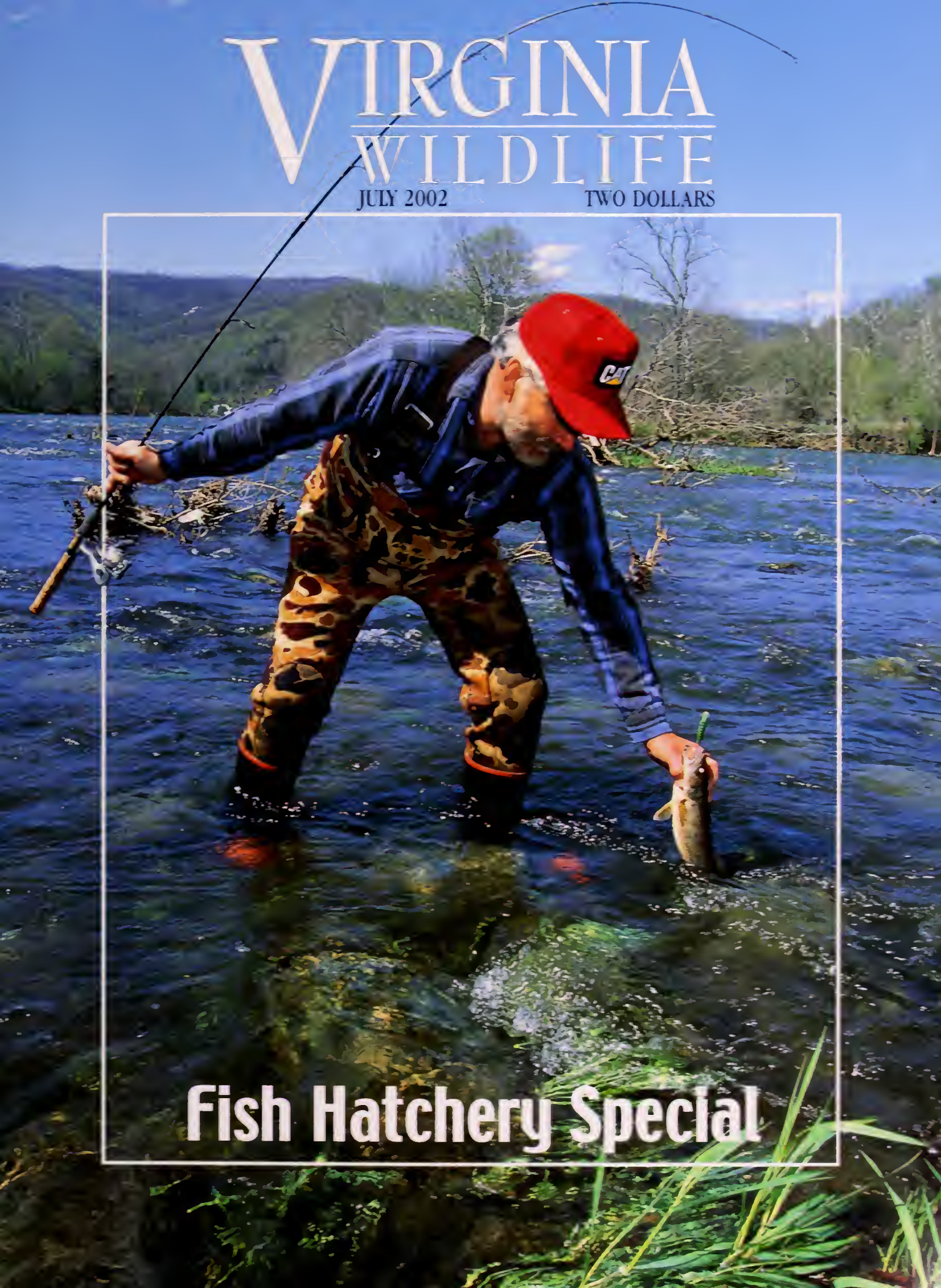
VIRGINIA WILDLIFE

JULY 2002 TWO DOLLARS



Fish Hatchery Special

Director's Column

William L. Woodfin, Jr

During its 86-year history, the Virginia Department of Game and Inland Fisheries has been directed by a number of innovative and dedicated leaders, and during that time, the agency has continually advanced its programs and activities to meet the changing times. One individual with a far-reaching vision steered the agency for two decades. Today, all Virginians benefit from the work of Mr. Chester F. Phelps.

On April 26, 2002, Mr. Chester F. Phelps, 92, former Director of the Virginia Commission of Game and Inland Fisheries, now the Virginia Department of Game and Inland Fisheries, passed away quietly. He held the position of Executive Director for 20 years from July 1, 1958 until 1978, still a record for longevity in that position. His entire career with the agency spanned some 40 years.

Mr. Phelps had a background in forestry as well as wildlife management. He graduated from North Carolina State College in 1931 with a Bachelor's of Science degree in forestry, and later received his Master's degree in wildlife conservation from Virginia Polytechnic Institute and State University (VPI).

In the 1930s he worked in various positions with the U.S. Forest Service; Southeastern Forest Experimental Station; U.S. Department of Agriculture; Bureau of Plant Industry; Pennsylvania Department of Forests and Water; U.S. Park Service, at the Yorktown Colonial National Park, and Virginia Cooperative Research Unit at VPI.

He became the first chief of VDGIF's Wildlife Division in 1942. He served during World War II in the U.S. Air Force from August 1942 until January 1946, and was discharged with the rank of captain. He then returned to VDGIF as chief of the Wildlife Division.

Among Mr. Phelps' most notable accomplishments while at VDGIF was the inauguration of the biologists program, whereby game management was established on a scientific basis in Virginia. He instituted the development of the district biologist system, in which biologists worked closely with law enforcement personnel. This program became a model for many other states. He began the restoration of the deer herds west of the Blue Ridge, which often has been heralded as one of the best big game restoration projects in the country.

Mr. Phelps initiated the land purchase program, which enabled VDGIF to acquire such strategic wildlife management areas as Hog Island, Saxis Marsh, the Gathright Tract, and the James River Wildlife Management Area. Another of his notable accomplishments was his work for the replenishment of the wild turkey in Virginia.

On July 30, 1977, VDGIF dedicated the Chester F. Phelps Wildlife Management Area in Fauquier and Culpeper Counties in his honor. Mr. Phelps commented at that occasion that "there could never be any higher honor than this, a living perpetual recognition that will last longer and be of greater value than anything cast in metal or carved in stone."

He concluded his remarks that day by saying, "far and away, the greatest prize that life has to offer is a chance to work hard at work worth doing. I have had that opportunity... and I am humbly proud to accept this great honor in behalf of all those who made it and all of the other programs possible. I will go on for a while, but may our programs, as symbolized by this wildlife management area, go on and on forever."

Commonwealth of Virginia
Mark R. Warner, Governor

HUNTING & FISHING
LICENSE FEES
Subsidized this publication

Secretary of Natural Resources
W. Tayloe Murphy, Jr.

Department of Game and
Inland Fisheries
William L. Woodfin, Jr., Director

Members of the Board

Carson Quarles, Roanoke, Chairman
Cecil T. Campbell, Warrenton
Richard L. Corrigan, Arlington
Chuck Cunningham, Fairfax
Jimmy Dean, Varina
Dan R. McCoy, Big Stone Gap
Charles G. McDaniel, Fredericksburg
Will McNeely, Charlottesville
Rickie L. Richards, Virginia Beach
Jack T. Shoosmith, Chester
Robert K. Wheeler, Crewe

Magazine Staff

Lee Walker, Editor
Mel White, Ron Messina, Julia Dixon Smith, Contributing Editors
Emily Pels, Art Director
Spike Knuth, Illustrator, Staff Writer
Carol Kushlak, Production Assistant
Marika Byrd,CPS, Office Manager
Staff Contributors: Dean Fowler, Carol Heiser

Color separations and printing by Nittany Valley Offset, State College, PA.

Virginia Wildlife (ISSN 0042 6792) is published monthly by the Virginia Department of Game and Inland Fisheries. Send all subscription orders and address changes to *Virginia Wildlife*, P. O. Box 7477, Red Oak, Iowa 51591-0477. Address all other communications concerning this publication to *Virginia Wildlife*, P.O. Box 11104, 4010 West Broad Street, Richmond, Virginia 23230-1104. Subscription rate is $10.00 for one year, $24.00 for three years; $2.00 per each back issue, subject to availability. Out-of-country rates are the same but must be paid in U.S. funds. **To subscribe, call toll-free (800) 710-9369.** Postmaster: Please send all address changes to *Virginia Wildlife*, P.O. Box 7477, Red Oak, Iowa 51591-0477. Postage for periodicals paid at Richmond, Virginia and additional entry offices.

Copyright 2002 by the Virginia Department of Game and Inland Fisheries. All rights reserved.

The Department of Game and Inland Fisheries shall afford to all persons an equal access to Department programs and facilities without regard to race, color, religion, national origin, disability, sex, or age. If you believe that you have been discriminated against in any program, activity, or facility, please write to: Virginia Department of Game and Inland Fisheries, ATTN: Compliance Officer, 4010 West Broad Street. P.O. Box 11104, Richmond, Virginia 23230-1104.

Virginia Wildlife Magazine
subscription calls only
1-800-710-9369
12 issues for $10.00!
36 issues for $24.00

page 8

VIRGINIA WILDLIFE

Cover: Thanks to Virginia's state fish hatcheries and the Department of Game and Inland Fisheries' stocking program, catching fish like this walleye on the Clinch River, in Scott County, is just one of the many excellent angling opportunities in the Old Dominion. Photo ©Dwight Dyke.

page 13

page 25

Features

4 **Banshee Reeks** by King Montgomery
Northern Virginia's newest nature preserve and park.

8 **Wild Life, Night Life** by Carol Heiser
Join *Wild in the Woods* as we shed a little light on the nocturnal world of wildlife.

13 **Virginia's State Fish Hatcheries** by Dean Fowler
An in-depth look into the important role of maintaining and restoring fish populations through the VDGIF stocking program.

25 **Family Fishing Vacations** by Bob Gooch
Virginia's state parks—a little something for everyone.

July Journal

28 Journal
31 What is That?
Bowfin
32 On The Water
Muscle Powered Boats
33 Recipes
Emergency Foods
34 Backyard Wild
Accepting Caterpillars
35 Naturally Wild
Black-crowned Night Heron

Dedicated to the Conservation of Virginia's Wildlife and Natural Resources

VOLUME 63 NUMBER 7

Banshee Reeks

Preserving a slice of paradise for future generations is inspiring concerned citizens of Northern Virginia to band together for a greater cause.

written & photographed
by King Montgomery

It is said the owner of a farm in the wilds of 18th century Loudoun County was a gentleman of Scottish/Irish extraction. In the Gaelic language of his ancestors, a "banshee" is a female spirit whose wailing is a portend of death; and "reeks" refers to a landscape of gently rolling hills.

One evening, as the story goes, the farmer went to the nearby village of Leesburg to take care of some business and to visit his favorite tavern. Upon his return to the farm later that night, the wind was howling and the night creatures were particularly loud and ominous-sounding. From then on, the farmer proclaimed to all who would listen that he had heard a banshee on the reeks.

Today Banshee Reeks is a 700-acre nature preserve and park formed in April 1999, and operated by the Loudoun County Department of Parks, Recreation and Community Service. The preserve is avidly supported by the Friends of Banshee Reeks, a volunteer, not-for-profit organization of citizens concerned about preserving and enjoying a small slice of the few remaining wilder places in Northern Virginia.

Banshee Reeks Park is located a few miles south of Leesburg. It offers a diverse ecosystem.

Banshee Reeks is not open to the general public yet—it will be in the near future after more preparation—but special guided walking trips can be arranged for Scout groups, schools, conservation and other community organizations. These walkabouts are tailored to specific group needs.

Top: The old manor house serves as the park headquarters and visitors center. Above: Park manager Ron Circe points to a raccoon track just below a fresh deer print.

A Piedmont System

Banshee Reeks is part of the piedmont ecosystem between the mountains and sea, and its flora and fauna reflect the diversity found in the Virginia piedmont regions; at least those that haven't been developed and paved. Home to two miles of Goose Creek, a Virginia Scenic River forming the southern park boundary, and three wetland ponds, the park is rich in riparian and aquatic plants and animals.

Its successional fields, hedgerows, and forests host a profusion of wildflowers and mixed hardwood forests of mostly hickory and oak. The flowers draw squadrons of butterflies and a host of other insects, and combine with the shrubs and trees to persuade birds of many feathers to flock to the sanctuary of Banshee Reeks year round.

Various chapters of the Audubon Naturalist Society, the Loudoun Wildlife Conservancy, the Virginia Native Plant Society, and other conservation organizations host bird, butterfly, and other nature walks at the preserve because it is one of the few relatively wild, diverse examples of the habitat that used to be.

Facilities

There are several buildings on the property, some new, some old. The farmhouse or manor house holds the facility staff offices and serves as the temporary Visitor and Education Center. The park staff consists of manager Ron Circe and his part-time assistant Spring Ewald. They are augmented by the enthusiastic volunteers of the Friends of Banshee Reeks, such as Jill Rasmussen, who showed me around and who shepherds volunteers through various duties.

Ron Circe, a former engineer with the U.S. Geological Survey, is a man

A few years ago fire damaged this old log cabin built originally in the 1830s. It is still a sound structure and might be reconstructed to show how homes were built years ago.

The park's unofficial motto is "take only pictures, leave only footprints."

There are several old barns and a log cabin that dates back to the 1830s—perhaps the banshee herself lived there. Now home to swallows, owls, and other creatures, these structures represent old architecture and building methods that stood the tests of time.

An old silo on the property houses barred owls, now in their third year of nesting in a box built high up inside the cylindrical edifice. Everything at Banshee Reeks, including the few man-made structures, are used as habitat by creatures that must adapt in the face of our ever-widening encroachment.

The park has a primitive camping area for use by Scout and other responsible groups. This "leave no trace" campsite must be left the way it was found, or better. Everything carried in is taken out, and the grounds restored to the way they were. Those wanting to experience the way things were before picnic tables, groomed tent pads, running water, and toilets, can do so here. Reservations are required.

Volunteers

Volunteers are the life-blood of Banshee Reeks. The Friends, the Loudoun Wildlife Conservancy, Scout groups, and others build marked trails and do other projects in the preserve to accommodate the increased visitation when the park opens to the public. The Springhouse Run Trail, which opened late last year, has 10 stations where visitors can pause, observe, and read an informative brochure about the wild things in front of them. The trail and the brochure were an Eagle Scout project of Brett Berman, from Boy Scout Troop 956 in Sterling.

The third Saturday of each month is Volunteer Work Day at Banshee Reeks sponsored by the Friends of Banshee Reeks. If you want to become familiar with the preserve, and meet a lot of nice, like-minded people, this is a good way to do it.

Left: Boy Scouts from Ashburn camped at the primitive campsite and worked on projects in the park. Right: Park manager Ron Circe (left) and Jill Rasmussen (right) show the family of Carl Giesy and Hilary Quinn some of the work that needs to be done around the park.

with a mission; he wants to turn the old farm and woodlands back to the wild, and let people visit the land and its inhabitants to see the many wonders that nature has to offer.

When I visited on a warm November day, Ron and Jill orchestrated the efforts of individuals, families, and Boy and Girl Scout groups who showed up to help. Particularly notable were the fine young ladies from Junior Girl Scout Troop 4464 in Sterling who worked long and hard.

It is encouraging to see the enthusiasm among such diverse people for a common and worthy cause. "We need the tonic of wildness," said Thoreau over 150 years ago. His words are still true, but now we have far fewer places left in which to find the wild and its magic elixir.

Several conservation groups, sometimes aided by the Loudoun Soil and Water Conservation District, often join the Friends in sponsoring/hosting activities that involve:

- Bird watching and counting
- Spring wildflowers
- Tree identification
- Butterfly watching
- Aquatic critters
- Salamander search
- Sights and sounds of the night
- Insects and snakes

There is something for everyone at Banshee Reeks. Some of the sessions cost a few dollars to help defray expenses—a fair price for a day of learning and fun at a beautiful place where the "tonic" abounds.

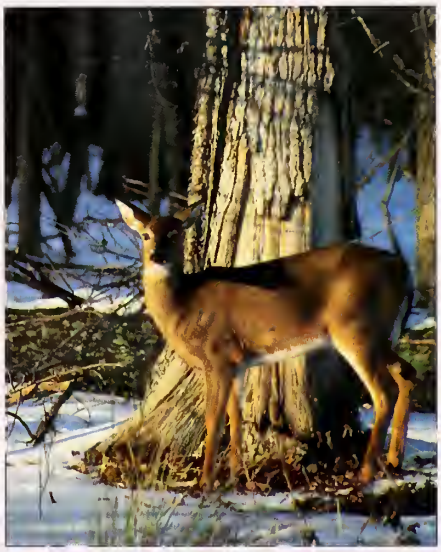
Above: A very enthusiastic group of Girl Scouts from Ashburn, spent the day helping to clean the Volunteer Center.

Trouble in Paradise

When the Loudoun County Board of Supervisors voted in 1999 to establish Banshee Reeks as a "nature preserve and public parkland to be used exclusively for conservation and related, non-intrusive education purposes," it was assumed that area set aside would be protected.

There is little development around Banshee Reeks, and the relatively unspoiled land on the periphery serves to protect the natural integrity of the park. Now a real estate development company plans to build over 275 houses on the 200 farmland acres that constitute the western border of Banshee Reeks. If built, the housing development will adversely impact the survival of the preserve as a quiet place of wild beauty.

Hopefully, a coalition of conservation groups and other concerned citizens who have banded together to save Banshee Reeks can stop the house-building, pipe-laying, line-stringing, and road construction that could ultimately alter and maybe destroy the park. Otherwise the next banshee heard on the reeks may be the one sounding the death knell of a once quiet, free, and natural place. □



King Montgomery is a writer/photographer from Burke, and is a frequent contributor to Virginia Wildlife. *He finds it increasingly difficult to find places that provide "the tonic of wildness."*

Banshee Reeks Information

- *Banshee Reeks Park* is off Route 15 south of Leesburg. For more information: go to www.bansheereeks.org or call (703) 669-0316.
- *The Friends of Banshee Reeks Nature Preserve, Inc.* For more information call (540) 554-2542 or email jandkcoleman@erols.com.
- *The Loudoun County Wildlife Conservancy* can be reached at (540) 554-2542 or go to www.loudounwildlife.org.
- *The Virginia Native Plant Society* is into conserving wildflowers and wild places. Contact it at 400 Blandy Farm Lane, Unit 2, Boyce, VA 22620 or go to www.vnps.org.
- *The Audubon Naturalist Society* strives to inspire people to love and respect the gifts of our natural inheritance. Call (301) 652-9188 or www.audubonnaturalist.org.

Wild in the Woods

Wild Life, Night Life

by Carol A. Heiser
illustrations by Spike Knuth

Not long after the sun has melted down over the horizon on a hot summer's evening, an attentive observer sitting quietly on a screened porch will gradually become aware of numerous sounds not man-made. Insects chirp, whine, and buzz, leaves rustle, an owl calls. At night we strain our eyes to see what we can not see, gazing into the black and imagining curious shapes in the trees. Bedtime stories may reassure children that nature goes to sleep when we do, but in reality there's another world out there that's just reawakening. Although it might appear that the night is an empty, blank slate, we'd be surprised at how much wildlife is slinking, crawling, or otherwise flying about, if we could turn on a beacon in the sky and illuminate our world at any given moment.

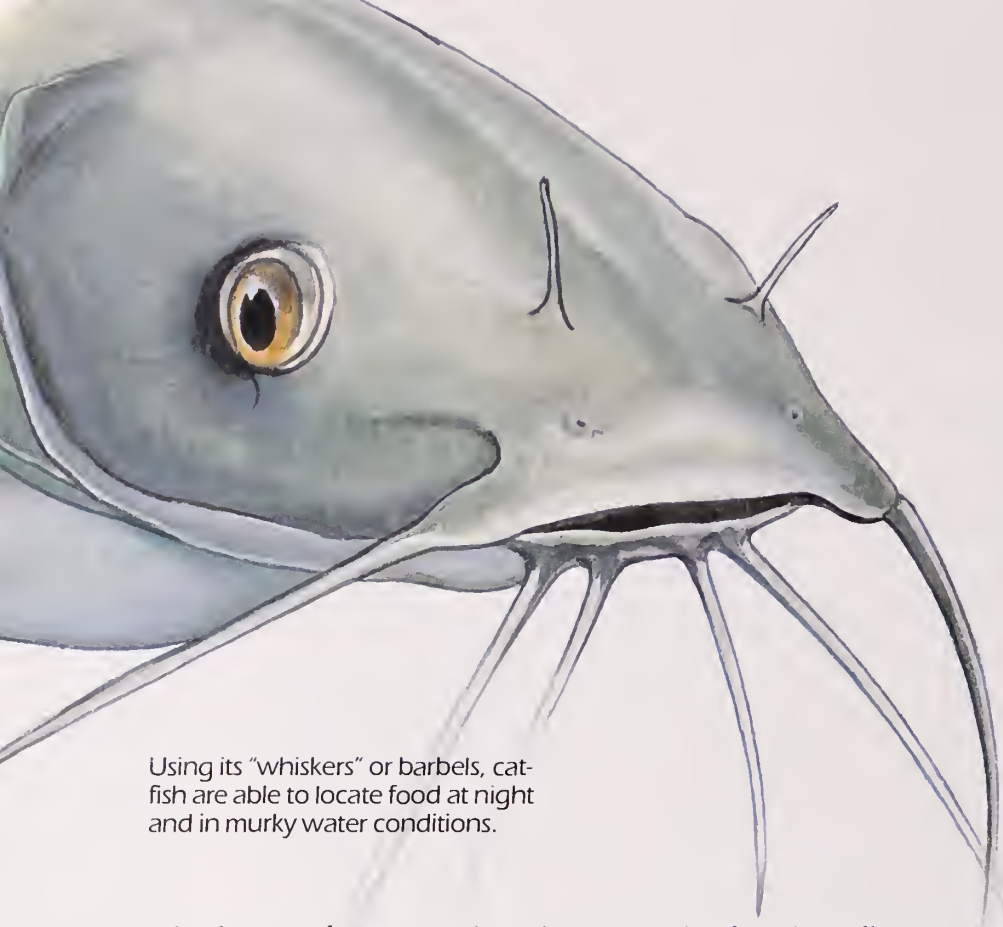
Animals that are active during the day *(diurnal)* use various strategies to avoid being seen and becoming a meal, such as bright coloration to distract a predator from a nest, camouflage to blend into surroundings while feeding, or loud vocalizations that warn others to be on the lookout. *Nocturnal* animals, on the other hand, have found ways to take advantage of the safety that darkness affords, and they eat, hunt, rest, and raise their young with strategies specifically adapted to low or no light conditions. This dichotomy between nighttime and daytime activity serves to balance out the food web by allowing one group of animals to mirror the function of another, with counterparts at opposite ends of the clock. For example, hawks prey on small mammals during the day, while owls take over this job at night. Songbirds forage on insects by sunlight; bats pick the bugs out of the sky under the moon's pallor.

The Challenge of Darkness

To survive in the gloom, nocturnal animals have very sharp senses to see, hear, and feel their way to a nourishing dinner or a safe slumber. Night animals often have more sensitive noses, because the air tends to be still and scents hang in the air longer, making them easier to track. Raccoons have a keen sense of smell and also rely on touch to feel their way to prey hiding in a stream. A catfish is most active at night and is adapted for feeding under low light conditions. It's "whiskers" or barbels are made up of specialized skin that contain chemical receptors which can "smell" or "taste" the water and locate prey like fish, insects, crayfish, and mollusks along a river or pond bottom. Beavers usually work at night by listening to the flow of water. Bobcats use stealth to keep prey from hearing them. Weasels rely on speed and agility to hunt for mice and voles, and their streamlined, narrow body can reach into a mouse's hole.

The common raccoon *(Procyon lotor)* prefers to hunt for food during the cover of darkness. Its keen sense of smell and touch help it to catch small insects and animals, like frogs, that hide underwater or in small holes in the ground.

Barred owl (Strix varia)



Using its "whiskers" or barbels, catfish are able to locate food at night and in murky water conditions.

The adaptations of some nocturnal animals are quite astonishing. Owls, for example, have not one but several specialized features. Their eyes contain many more rod cells than diurnal species. Since rod cells are more sensitive to motion, owls can easily detect movement in very dim light. Their eyes are front-facing, which provides good depth perception, and a special ring of stiff feathers around the face helps catch and amplify sound waves, like cupping your hand to your ear. In some species, such as the barn owl, the ears contain specialized feather tufts that catch and direct sound waves, with the right ear opening into a tuft that points upward and the left ear opening into a tuft that points down. To complete the package, the edges of an owl's primary (flight) feathers are very soft to help muffle sound as it swoops down on an unsuspecting rat or possum.

Bats, too, are highly skilled for cruising the night skies. While hunting, a bat can emit up to 90 chirps or squeaks per second, inaudible to us because of the sound's high rate of vibration. The sound waves scatter and hit various objects in the environment, and when they do, the sounds bounce back as an echo to the bat. Since each object scatters sound differently, depending on the object's shape, size, density, and distance, a bat can determine where objects and prey are by hearing and interpreting these returning echoes: a process called echolocation. Moths, a favored prey of bats, compensate for the dive bombers by darting about with erratic movements or fluttering to the ground when they hear the high-pitched ultrasounds.

Ever wonder why a cat's eyes glow in the dark? In the back of each eye is a patch of mirror-like cells, called the tapetum lucidum. The chemical guanine in the cells causes light rays to be reflected off their surface. The millions of tiny reflections fill the eye with light, which enables the cat to see images in the dimmest conditions.

Nature's Night Lights

Of course, a summer night would not be complete without the twinkling display of fireflies. These beetles produce a form of light known as bioluminescence, made possible by two chemicals called luciferase and luciferin, named for Lucifer the Roman god of light. A firefly begins life as an egg laid on the ground, and when they hatch into larvae they glow—hence the name "glowworm." Glowworms can be found under damp, fallen leaves, where they feed on cutworms, earthworms, snails, and slugs by using their strong curved jaws to inject their prey with venom. The glowworm will burrow under the soil during cold weather, and this stage of its life lasts from one to two years.

After several molts, the glowworm becomes a pupa, which lives in an underground chamber for several weeks while it develops into an adult. When it emerges as a firefly, the adult form only lives for about three weeks. Males flash their signal while flying about in search of a female; females rest in the grass and only flash in response to a male. Each firefly species has a unique pattern of flashing with various combinations of colors and brightness, which can vary depending on the temperature and the number of hours after sunset. The light of a firefly is cold, as no energy is produced or lost during the chemical reaction.

Did You Know?

Ever wonder why birds don't fall off their perch at night while sleeping? A bird's toes are attached to tendons—string-like strips of tough tissue—which are connected to muscles in the leg. When the bird is standing, the leg muscles are extended so the tendons are relaxed and the toes are spread out. When the bird sits or roosts and its leg is in a bent position, however, the muscles tighten and pull the tendons taut. The tendons, in turn, curl the bird's toes around the perch in a tight grip.

Fun on a Night Hike

Introduce your family to the world of nature at night with a short walk along a forested trail at a campground or other safe park or rural setting. Avoid the temptation to bring lots of flashlights! If you allow some time for your eyes to become completely adjusted to the dark—which can take between 30 to 45 minutes—you will find that it's really not that hard to see after all, especially if the moon is out. Designate one person in the group to hold the flashlight, and only turn it on when absolutely necessary,

Right: Relying on high-pitched ultrasound, or sound waves, a bat can locate objects and hunt for prey, like moths, to feed on.

Firefly

or it will take another 30 minutes for the eyes to adjust again. A red filter over the lens (cellophane will work) can help reduce the glare.

Practice using all of the senses on your walk. You can pass some small objects around and then identify them by touch. Try chewing on a few pine needles while holding the nose, then let go of the nose and notice the stronger taste: smell and taste are linked. Sit or stand quietly and listen to all of the sounds around you: how many sounds are human-made? how many different types of insects and other animals can you hear? Cup your hands behind your ears for a few minutes and listen, then switch your hands the other way around and listen again.

Our night vision is more two-dimensional than during the day, and objects appear more like silhouettes because depth perception is reduced. When your eyes are well adjusted to the dark, stare up into the trees and observe the spaces between the branches and leaves. If you stare long enough, the background will appear to become the foreground and produce a "negative" effect.

Play a camouflage game in which one person stands still, closes their eyes and counts while everyone else hides nearby (check for poison ivy during the day). The one counting then opens their eyes and while remaining in the same spot tries to see where the others are hiding. As others are spotted in this first round, they return to where the one counting was standing. Now this new group closes their eyes, while everyone who is left hiding comes closer to the group and hides again. Repeat until everyone has been found.

A night hike is not complete without the wintergreen Life Saver "trick." Put a wintergreen Life Saver in your mouth and crunch down quickly on it with your lips pulled back so everyone can see your teeth, and they will observe "sparks" of light. This is because a nitrogen gas associated with the sugar in the candy is released, and a glow is produced by a chemical reaction when the nitrogen is absorbed by the oil of wintergreen. The effect is more dramatic with dry candies, because moisture interferes with the chemical reaction. ☐

Carol Heiser is a Wildlife Habitat Education Coordinator at the Virginia Department of Game and Inland Fisheries.

Virginia Naturally

Virginia's State Fish Hatcheries

Turning fishing into catching.

story by Dean L. Fowler
photos by Dwight Dyke

I remember the thrill of coming face-to-face with the biggest, most beautiful fish I'd ever seen, actually getting to feed them, and daydreaming about reeling one in and showing it to all my friends. It was one of the highlights of my childhood visits to my grandparents in New York; a lifetime memory that helped "spawn" my interest in fish and a career in fisheries management. They must have taken me to an aquarium, right? Wrong. What got me so excited was visiting a New York State fish hatchery. I wasn't the only one "hooked"; even my little sisters loved it! But hatcheries aren't just great places to *see and feed* fish, they're wonderful sources of information about fish and how and why they're raised.

Does Virginia have any fish hatcheries? You bet! The Virginia Department of Game and Inland Fisheries (VDGIF) operates nine hatcheries across the state. But they do a lot more than just "hatch fish," and in fact, the term "hatchery" is actually a misnomer in some cases. Not all of these facilities actually hatch fish; some only rear fish from larval stages to fingerling size (about the size of a toddler's finger). These facilities would more aptly be described as rearing stations, but for simplicity's sake; in this article we'll call them all "hatcheries."

Of Virginia's nine fish hatcheries, five are called "coldwater" and four are called "warmwater." As you might guess, the coldwater hatcheries rear fish that require cold temperatures (under 70°), such as trout. These hatcheries are located in the mountains where cold, spring-fed streams abound. The warmwater hatcheries rear species that prefer cool or warm water, such as largemouth bass, striped bass, bluegill, muskellunge, and walleye.

So, why do we need these hatcheries and what exactly do they do? Most importantly, they provide fish for stocking

Previous page: Walleye fry at Front Royal Hatchery.
Top: Checking striped bass fry under a microscope at Vic Thomas Hatchery. Middle: Netting trout at Marion Hatchery for stocking. Bottom: Collecting trout eggs at Marion Hatchery.
Top: The degassing towers at the Marion Hatchery are used to remove dissolved nitrogen and oxygenate water prior to its use in raising fish.
Above: In the early stages of raising fish the young fry or larvae must be monitored regularly for proper development.

Top: Virginia state fish hatcheries, like Montebello, provide an excellent environment for hands-on learning about fish biology and fisheries management. Above Catchable size rainbow and brown trout, raised at Coursey Springs Hatchery, are stocked into the Bullpasture River.

brand new public lakes and waters where natural reproduction and growth are insufficient to maintain good fishing. New lakes need to be "seeded" with desirable sport fish, typically largemouth bass, bluegill, and redear sunfish (also known as "shellcrackers"). These species are used because they will reproduce and create large populations that don't need to be maintained by stocking. Within a year or so after stocking the fish reach sexual maturity and start reproducing.

In the western half of the state, catchable size trout are stocked in many waters that do not have self-sustaining (reproducing) trout populations or good warmwater sportfish populations. Stocking these larger trout provides excellent recreational opportunities in waters where fishing had been limited or non-existent in the past.

Many of our lakes are stocked with large predator fish such as striped bass and walleye. Why? Because they provide anglers with a wider variety of species to fish for, and they help control the overabundant populations of less desirable fish, such as gizzard shad. Striped bass are also very popular with anglers as a trophy fish. In most of our lakes, these species don't have the types of habitat they need for successful spawning, so their populations must be maintained by regular stockings (usually annual or biannual).

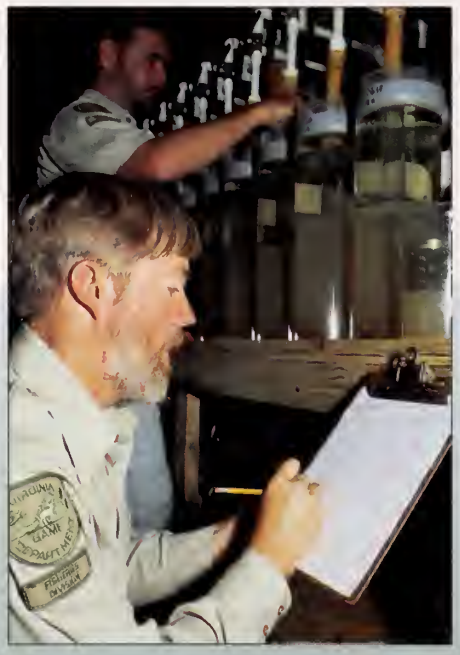
In recent years, VDGIF hatcheries have played an important role in helping to restore depleted fish populations. Most notably, cooperative stocking programs with the U. S. Fish & Wildlife Service and other Virginia state agencies have been used to bolster stocks of anadromous (sea-run) striped bass and American shad that were decimated by over-fishing, pollution, habitat degradation, and dams that blocked spawning runs. It's possible that they may take part in restoration attempts for other anadromous fish, such as Atlantic sturgeon in the future.

And finally, our hatcheries have broken new ground by raising endangered mussels that are being stocked to re-establish lost populations. Working together with Virginia Polytechnic Institute and State University (VPI & SU), they developed methods of spawning and rearing these shellfish, which often

have complicated life cycles. Why bother with mussels? Because they are a component of the food web and help to keep streams clean by filtering out organic debris while feeding. Their presence or absence tells us a lot about the health of a stream. In addition, they may be important in ways we don't currently understand.

It's obvious that VDGIF hatcheries play a very important role in creating, maintaining, and restoring our freshwater and anadromous fisheries. They help to maintain the ecological integrity of our aquatic systems and create recreational opportunities for Virginians and visitors to our great state. In ess , they're helping to turn fishing into catching!

We've listed the primary reasons why we have hatcheries in Virginia, but you probably could have guessed most of these on your own. Can you think of any other, less obvious, ways that you and I may benefit from our hatcheries? Revisit the first paragraph of this article. There, do you get it now? Education! Thousands of people visit our hatcheries to see and learn about fish. This helps create a feeling of stewardship (caring and responsibility) for our fish, wildlife, and the environment on which we all depend. In the end, this may be one of the most important contributions that our hatcheries can make to the citizens of Virginia!



Now that we know *why* fish are stocked, let's talk a little more about the types and numbers of fish that VDGIF stocks. During 2001, our hatcheries produced 4.3 million fish of 13 species (not including the 8 million anadromous American shad fry produced for the restoration program). Three species of trout (brook, rainbow, and brown) are stocked annually. Most are released into mountain streams as discussed earlier, but some are stocked into mountain lakes, such as Lake Moomaw. As part of the Department's urban fishing program, thousands of trout are stocked in ponds at six municipal parks in eastern Virginia during the winter when water temperatures are low enough for them to survive. This gives urban anglers in these areas a chance to catch several species of fish that they would normally have to travel hours to catch.

Virtually all of the largemouth bass, bluegill, and redear sunfish produced by Virginia's hatcheries are used to stock new or renovated lakes. Channel catfish are also stocked for new lakes, but most are used to stock Urban Fishing Program lakes during the summer and other lakes statewide where their natural reproduction is inadequate to maintain a sizable population. Some years the hatcheries produce smallmouth bass for specific situations, but the numbers are generally low. Two strains of striped bass are produced for stocking. The Roanoke River strain is produced for reservoirs in that river system, whereas Chesapeake Bay strain stripers are produced for stocking reservoirs in the Bay drainage. Wall-

Lower left: Monitoring egg hatching success, larval growth (top), and zooplankton (above), the primary food source for young fish in rearing ponds, are important steps in raising fish.

eye, which are native only to the Mississippi River drainage in the western tip of Virginia, are stocked in reservoirs of all sizes statewide because they grow to good sizes and they're one of the best tasting, freshwater fish on earth. And finally, muskellunge (muskie) and northern pike are stocked in a few lakes and rivers across the state to create trophy fisheries. Muskie are also stocked in the New River, where they're native, to supplement natural reproduction. Although they can be challenging to catch, it's well worth the effort because both of these species commonly exceed 10 pounds in Virginia waters.

The walleye and channel catfish that VDGIF stocks come from eggs or fry (young fish only a few millimeters long) imported from other states. Why? Because we don't have a good source of spawning adults or we haven't the space or equipment to artificially spawn these two species. It's easier for us to trade fish from our established production programs, such as striped bass, to states that have established walleye and channel catfish production programs. It works out well for everyone.

Raising fish for Virginia's anglers is an important job, and it sounds like a lot of fun doesn't it? Well, there's a lot more to it than spawning, feeding, and stocking fish. It takes a lot of work to build, operate, and maintain these hatcheries. There's much that can, and does, go wrong with the miles of underground water pipes and valves, drains, water and air pumps, aerators, fish feeders, generators, vehicles, and other mechanical and/or electric devices used by hatchery personnel, not to mention problems that can arise with the fish themselves (like disease). Concrete and/or wooden walls, floors, and other structures that are part of the hatchery ponds, raceways, and buildings also need periodic repair. To top it off, many of these hatcheries are quite old and their facilities are in need of replacement. Given these handicaps, it's a credit to our hatchery staff that they're able to produce as many fish as they do. Thankfully, one Department hatchery was recently renovated, and several others are scheduled for renovation in the coming years.

The hatchery staff removes dead eggs to help maintain proper water quality in the incubation jars. This gives the healthy eggs a better chance of hatching.

What else do hatchery personnel do? Here's just a few of the less obvious things: maintain records and write reports regarding hatchery operations and fish production; presentations regarding hatchery operations and other Department programs at schools and conservation group meetings; periodically separate ("grade") fish by size to keep them from eating each other; keep automatic fish feeders full and functioning, check water quality in ponds and raceways daily, check fish for diseases and parasites; clean fish feces, uneaten food, and dead fish from raceways and rearing tanks; scrub and disinfect egg hatching jars, fish rearing tanks and raceways, and fish hauling tanks; keep ponds and raceways clear of aquatic weeds; clean screens and drains clogged by aquatic weeds; net fish out of drained mud-bottom ponds during the heat of summer and cold of late-fall; hand-pick undesirable fish species from batches of fingerlings harvested from ponds; keep hatchery grounds clean and mowed; conduct vehicle, tractor, and generator maintenance, such as oil changes and well, you get the idea. Working at a hatchery and raising fish is not all glamour and fun, it's a lot of hard work.

Now that you know a little more about what hatcheries do and why they do it, let's take a closer look at each of the VDGIF hatcheries working our way from east to west.

The Warmwater Hatcheries

King and Queen State Fish Hatchery

King & Queen Fish Hatchery is located near Stevensville in the beautiful rolling hills of rural King & Queen County, about 40 miles northeast of Richmond. It was built in 1939 to produce largemouth bass and sunfish, but its role has been expanded significantly since that time. It now produces a wider variety of fish than any of the other Department's hatcheries, and it has been the primary hatchery

used for the restoration of anadromous striped bass and American shad. During 2001, King & Queen produced more than 1 million fingerlings. It serves as a hatching and rearing station for warmwater species spawned on-site (striped bass, largemouth bass, fathead minnow, bluegill, and redear sunfish) as well as for species that are imported as eggs or fry (American shad, walleye, and channel catfish). Fry are reared to fingerling size in 22 earthen ponds that provide a total of 17 acres of water. Although its rural location keeps visitation relatively low, there's a lot to see during spring when it's hatching and rearing shad, spawning and hatching striped bass, and hatching walleye eggs. If you visit during mid or late April, there's a chance you'll get to see some trophy size striped bass that have been captured from the spawning grounds of the Roanoke (Staunton) River and nearby coastal rivers. The American shad restoration program is also active at this time of year. This is a great time to see millions of shad eggs and fry at various stages of development. By mid-May all the shad fry have been stocked into area rivers and the walleye and striper fry have been stocked in the hatchery's fertilized ponds to feed on plankton for their first six weeks of life. These fish will be harvested from the drained ponds when they've reached 1.5 to 2 inches in length (mid-May through early-July). Some of the ponds are re-filled and stocked with channel catfish fry in July. These are fed pellet food throughout the summer and fall. Harvest of up to 10,000 pounds of 6-inch catfish fingerlings usually occurs in October and/or November. Except for American shad, fish produced by King & Queen generally are used to stock reservoirs throughout the state. Anytime is a good time to visit, but call ahead (804-769-3185) if you want to make arrangements for a guided tour. Tours can be given anytime between 8:30 a.m. and 3:00 p.m. on weekdays during most of the year. Weekend tours can also be arranged from late March to early May, when the hatchery is operating 24 hours a day. Bring your boat along and enjoy some of the great fishing offered via several public boat ramps along the nearby Mattaponi River.

Above: Hatchery staff adds anti-fungal agents to rearing tanks to maintain the health of young fish.

Front Royal State Fish Hatchery

Front Royal Fish Hatchery is Virginia's northernmost hatchery. Its location next to the George Washington National Forest makes it a great place to visit during a camping or leaf-viewing trip or after a fishing trip to the nearby Shenandoah River. This hatchery was completed in 1931 by the Civilian Conservation Corps (CCC) to provide smallmouth bass and sunfish for the Shenandoah River. The earthen ponds were constructed by excavation using a mule-drawn dredge (talk about hard work!). A grist and lumber mill, which was dismantled and reconstructed at Mount Vernon, was originally located at this site. The hatchery has 22 ponds totaling 14 acres of water for rearing fish. Some of the ponds no longer hold water due to their age. Even so, there's a lot to see and learn during a tour of Front Royal Hatchery. It is the first VDGIF hatchery to try rearing chain pickerel. First tried during 2000, they will be working on perfecting their techniques in the coming years. Biologists hope to use the pickerel produced at Front Royal for stocking lakes where northern pike have not fared well. In addition to

Top: Monitoring the health of young fish is an around-the-clock job. Above: At the Vic Thomas Hatchery, striped bass are injected with reproductive hormones to induce spawning in captivity. Right: The numbers of larval fish in each rearing tank, which can exceed one million, are estimated using special techniques.

rearing pickerel, walleye, northern pike, and largemouth bass are typically hatched and reared to fingerling size at the Front Royal Hatchery. It produced more than 680,000 fingerlings of these species during 2001. Most of the fish produced at this hatchery are stocked in reservoirs in central and northern Virginia.

The public is free to explore the hatchery grounds at their leisure. Displays describing fish hatching procedures can be found in the main hatchery building, and fish are sometimes held in outdoor raceways for public viewing. Depending on what time of year you visit, you may get to see eggs being hatched (spring), fingerlings being harvested from ponds (early summer and fall), fish being tagged before stocking, or adult trout being held for transport to ponds in the Urban Fishing Program (winter). Some of the ponds are even used during the winter for holding minnows (used to feed young musky) and adult broodfish (used for spawning the following spring). Front Royal Hatchery is open to the public Monday through Friday from 8:00 a.m. to 3:00 p.m., and the staff are usually available to answer questions. Formal tours can be arranged by appointment (540-635-5350). At the time of this writing, this hatchery was not handicap accessible and the public restrooms were not functional. Both of these problems will be rectified when the hatchery is renovated.

Vic Thomas Striped Bass Hatchery

Vic Thomas Striped Bass Hatchery (formerly known as Brookneal Fish Cultural Station) is located along the banks of the Roanoke (Staunton) River just south of the town of Brookneal. Because of frequent flooding, this hatchery was rebuilt on higher ground during the late 1990s. At that time, it was renamed the Vic Thomas Striped Bass Hatchery to recognize the many years of support that Delegate Thomas has provided to VDGIF. This hatchery is notable for being one of the first in the world to manually spawn striped bass, and it continues to be one of the largest producers of stripers in the United States. It is strategically located along a stretch of the Roanoke River where striped bass can be captured during their annual spawning runs from Kerr Reservoir (also known as Buggs Island Lake). This is a strain of striped bass that is genetically different from those found in the Chesapeake Bay. To protect the genetic integrity of the Bay strain, the young stripers that Vic Thomas produces are typically stocked in lakes in the western half of Virginia that are not in the Bay watershed.

There's always a lot to see at this hatchery during April and May. Hatchery staff use an electrofishing boat to collect ripe adult male and fe-

male stripers from the Roanoke River just down the hill from the hatchery itself. Once these fish are given injections of Human Chorionic Gonadotropin to promote spawning, they are placed in one of 12 large circular tanks where they spawn naturally. The eggs incubate in the spawning tank for about 48 hours until hatching. At five days of age and measuring only a few

millimeters in length, the fry are stocked in ponds for rearing to a fingerling size of 1.5 to 2 inches. More than 23 million striped bass fry were produced at this hatchery during 2001. About 750,000 striped bass fingerlings are harvested from its 20 acres of rearing ponds during early summer each year.

The hatchery produces far more striped bass than needed for Virginia waters. Because few other states have access to a reproducing landlocked population of striped bass, VDGIF uses surplus stripers to trade for species that it wants to stock, but that are not spawned by hatcheries in Virginia (such as walleye, northern pike, muskellunge, and channel catfish).

Even though Vic Thomas is called a striped bass hatchery, other species are reared there as well. Approximately 280,000 walleye and almost 72,000 channel catfish fingerlings were produced during 2001. It's obvious that the best time to visit this hatchery is in the springtime when it's hopping with stripers and walleye. But, there are things to see and do at other times of the year. Channel catfish are reared in ponds throughout the summer and early fall. You can also see them being harvested during late September and early October. Although there is no formal visitor's center at this hatchery, staff are usually on hand to answer questions. Tours should be scheduled by calling ahead (434-376-2314). This facility is handicap accessible, and public restrooms are available in the hatchery building.

Buller State Fish Hatchery

Buller Fish Hatchery, built in the 1950s, is Virginia's westernmost warmwater hatchery. It is located only a few miles south of the Department's coldwater Marion Fish Hatchery near the southwestern Virginia town of Marion. It should actually be classified as a coolwater hatchery because it mostly produces coolwater species such as walleye and muskellunge. It also produces trout. This makes it a particularly interesting hatchery to visit. Water for raising warmwater and coolwater fish in Buller's 20 acres of usable earthen ponds and indoor hatching and rearing system comes from the nearby South Fork Holston River. Trout are raised in four additional ponds located across the river from the main facility. These ponds are supplied with a blend of river and spring water to maintain the cool water temperatures that trout need to survive and grow. During your visit, you'll also notice 24 outdoor raceways (rectangular man-made "streams"). Several of these are used for the production of endangered mussels for restoration programs. Buller produced rainbow trout, muskellunge, smallmouth bass, and two strains of walleye during 2001. A strain of walleye found only in the New River was recently identified, and Buller was used to artificially spawn and produce fry to help restore their population. Except for muskellunge, which are stocked in lakes as far east as Norfolk, the fish from Buller are usually used to stock waters in the western half of Virginia.

Bottom left: Scientifically formulated food pellets insure proper nutrition and rapid growth. Above: Seine nets are used to remove fish from holding ponds for stocking.

April is an interesting time to visit this hatchery because eggs and fry of several species can be seen in incubation jars and rearing tanks. Rainbow trout can be seen year-round in the outdoor raceways, and adult smallmouth bass broodstock may also be available for viewing. Buller is open weekdays from 7:00 a.m. to 3:00 p.m. Guided tours can be arranged by calling (276) 783-4172. Handicap accessibility is limited at this facility.

The Coldwater Hatcheries

Montebello State Fish Hatchery

Although this is VDGIF's smallest hatchery, it gets by far the highest public visitation owing to its location near the Blue Ridge Parkway and the George Washington National Forest. Montebello was originally a private, commercial hatchery. It was operated by VDGIF under a lease agreement from about 1930 until the 1970s when the Department purchased it. Its location east of the Blue Ridge and near some of the most popular trout waters in Northern Virginia makes it a very important hatchery for the agency. It is also the main source of trout for Virginia's Urban Fishing Program, which is located entirely in the eastern half of the state. About 60,000 pounds of brook, rainbow, and brown trout are grown each year at Montebello from fingerlings supplied by other hatcheries. No spawning is done at this hatchery. During 2001, Montebello produced more than 166,000 catchable size trout. All of Montebello's trout are reared in 33 outdoor raceways that are supplied with water mostly from on-site springs, but also from nearby Mill Creek.

Visitation is highest during October, when many "leaf lookers" take to the Blue Ridge Parkway to enjoy the fall colors. At this time, parking can be difficult. A visitor's shelter contains a few picnic tables and public restrooms; the restrooms have no electricity or heat. Although it has no formal visitor's center, staff are readily available to answer questions, and the public is welcome to view fish in the lower raceways. Disabled access is limited because there is no pavement at this facility. Montebello is open to the public from 8:00 a.m. to 3:30 p.m. on weekdays and weekends. The hatchery's phone number is (540) 377-2418.

Left: Catchable size fish, like these rainbow trout at Montebello Hatchery, are counted as they are loaded on trucks for stocking. Above: Proper water temperatures are critical and affect fish health and growth.

Coursey Springs State Fish Hatchery

This hatchery, which was built during the 1960s, is located in rural Bath County near the town of Williamsville. In part because its spring can put out a very large amount of quality water (up to 15 million gallons per day), it's Virginia's most productive trout hatchery. Coursey Springs is a grow-out facility; no trout spawning or hatching is done there. It receives trout fingerlings from other hatcheries and grows them out to either advanced fingerling or catchable size (at least 7 inches) in 36 outdoor raceways. These fish are stocked in waters west of the Blue Ridge from Alleghany to Frederick Counties and at the Douthat Lake Fee Fishing Area. Coursey typically produces around 200,000 pounds of trout annually. During 2001, Coursey stocked over 405,000 catchable size brook, rainbow, and brown trout for the put-n-take, delayed harvest, and fee-fishing programs. It also stocked over 25,000 fingerlings for the put-grow-and-take program. Although this hatchery has no formal visitor's center, it's a fun place to visit. The public is welcome to see and feed the thousands of trout in the raceways. Bird watchers come to see the osprey, eagles, and other predatory birds that gather to try to get a free meal of trout. A variety of wildlife can also be seen in the 140 acres of undeveloped hatchery property that surrounds the facility itself. Fishing is allowed (with the proper licenses) in Spring Run just downstream of the hatchery from 8:00 a.m. to 3:00 p.m. Hatchery escapees and regular stockings keep

this area well supplied with trout. Guided hatchery tours can be scheduled by prior arrangement (540-925-2343). The public is also welcome to explore the hatchery grounds on their own, and the staff are usually available to answer questions. Restrooms are available for hatchery visitors. The hatchery is open to the public 365 days per year from 8:00 a.m. to 3:30 p.m.

Paint Bank State Fish Hatchery

Paint Bank Hatchery is actually a federal facility that is owned by the U. S. Fish and Wildlife Service and operated by VDGIF. It was built during 1957 in the Jefferson National Forest near the town of Paint Bank, which got its name from the fact that Indians historically dug clay from the surrounding area for coloring pottery. This hatchery is most notable for its disease free status; in fact, it's the only disease-free coldwater hatchery in Virginia. As a result, it has been given the coveted honor of being a member of the National Broodstock Program. Paint Bank Hatchery has the only certified disease free strain of Nashua brook trout remaining in the world! In order to protect its disease free status, Paint Bank is not allowed to receive fish from other hatcheries. It does, however, supply eggs and fingerlings to other hatcheries, particularly Coursey Springs and Montebello. Coursey Springs typically receives about 1 million fingerlings from Paint Bank for grow out each year! Paint Bank also ships out about 500,000 brown and brook trout eggs annually. During 2001, it even sent surplus eggs to hatcheries in Maryland, New York, Tennessee, and South Carolina. In a typical year, Paint Bank rears about 130,000 pounds of brook, rainbow, and brown trout. During 2001, it stocked more than 227,000 catchable size and 206,000 fingerling size trout in the nine surrounding counties. The principal water supply for this hatchery is unique in that it originates from cave springs. Even when combined with water from a nearby well, it is insufficient to operate all of the hatchery's facilities. There is only enough water to supply the egg incubation system, indoor rearing tanks, and 36 of the 44 outdoor raceways.

Although there is no formal visitor center at Paint Bank, the production room has poster board displays that depict and explain the spawning, egg incubation, and rearing phases of the operation. Guided tours can be arranged by appointment (540-897-5401); public access is not restricted so you can explore the hatchery on your own if you desire. If there's a particular part of the fish production process that you want to see, call ahead to determine the best time of come. Only 50 of the 500 acres of hatchery property have been developed, so there is plenty of room for a nature walk in the surrounding forest. If you visit during October, you'll get the added benefit of seeing the fall colors. Handicap-accessible picnic facilities and public restrooms are available at this hatchery, and it is open to the public seven days a week from 8:00 a.m. to 3:30 p.m.

Top: In addition to temperatures, hatchery staff must monitor pH levels and dissolved oxygen levels (above), as well as other water quality characteristics.

Wytheville State Fish Hatchery

Like Paint Bank, Wytheville Hatchery is owned by the federal government and has been operated by VDGIF since 1983. The U. S. Fish and Wildlife Service plans to transfer the titles for both of these hatcheries to VDGIF in the near future. Wytheville Hatchery is located in Fort Chiswell near Interstates 81 and 77, New River Trail State Park, and the Shot Tower. It rears from 150,000 –180,000 pounds of brook, brown, and rainbow trout in its 48 outdoor raceways each year. Dur-

ing 2001, Wytheville produced more than 215,000 catchable size trout from eggs that were spawned on-site as well as eggs received from New York. Although most of these fish were stocked in the nine counties that surround the hatchery, some were stocked in lakes that are part of the Department's Urban Fishing Program in the eastern half of the state and the Crooked Creek Fee Fishing Area. Two large bubbling springs on the property supply all of the hatchery's water for fish production (approximately 2700 gallons per minute).

Wytheville has the most sophisticated visitor center of any hatchery in Virginia. Live fish, and sometimes other aquatic creatures, are on display in aquariums. The fish production process is explained and depicted using wall-mounted photographs. Large 4–8 pound broodfish are frequently available for viewing in the outdoor raceways, as are the younger trout that are being reared. Visitor access to the hatchery buildings and surrounding grounds is not restricted, and public fish feeding is allowed. Only 15 of the 120 acres of hatchery property has been developed, so there are ample areas for visitors to explore. As with the other hatcheries, guided tours are available by appointment (540-637-3212). Two indoor restrooms are available to the public, but they are not fully accessible to the handicapped. This hatchery is open to the public from 8:00 a.m. to 3:30 p.m. daily.

Fertilized trout eggs are kept indoors in incubation trays, like those shown above at the Marion Hatchery. Right: Fingerling trout are separated by size in preparation for rearing in outdoor raceways. This helps to reduce big fish from feeding on smaller fish, the wasting of food, and producing evenly sized fish for stocking.

Marion State Fish Hatchery

The Marion Fish Hatchery is one of Virginia's two original state trout hatcheries (of the other three, two were originally built and operated by the federal government and one was privately owned). This hatchery is located on Route 16 about a mile and a half from the town of Marion. A hospital for the mentally handicapped owned all of the land surrounding the hatchery when it was built in the 1930s. Most of this land has since been acquired, and the hatchery grounds now encompass 213 acres, of which eight have been developed. There's plenty of space to enjoy a nature walk along the adjacent creek or a hike up a mountainside, and there are also sheltered picnic tables available.

Marion Hatchery uses water from nearby Staley Creek and a number of springs to spawn and raise about 175,000 pounds of brook, rainbow, and brown trout each year. During 2001, it produced more than 350,000 catchable size trout. These fish are used to stock waters in extreme southwest Virginia including the Clinch Mountain Fee Fishing Area. Marion also supplies fingerlings to two other VDGIF hatcheries that do not spawn their own trout. All three species of trout can be seen in the 63 outdoor stone wall raceways where they are reared to catchable size. Until they are large enough to be placed in these raceways, the young trout are reared and can be viewed indoors in concrete tanks. If you want to see trout being spawned, it generally takes place in the fall. Call ahead to determine the best time to visit. The large broodfish used for spawning, however, can be seen any time of year. Marion Hatchery has a recently renovated visitor center containing a nice variety of wildlife mounts, some antique hatchery equipment, VDGIF information pamphlets and magazines, and public restrooms that are handicapped accessible. The public is allowed free access to any part of the hatchery from 8:30 a.m. to 3:30 p.m. daily, but guided tours generally need to be arranged by calling ahead (540-782-9314). □

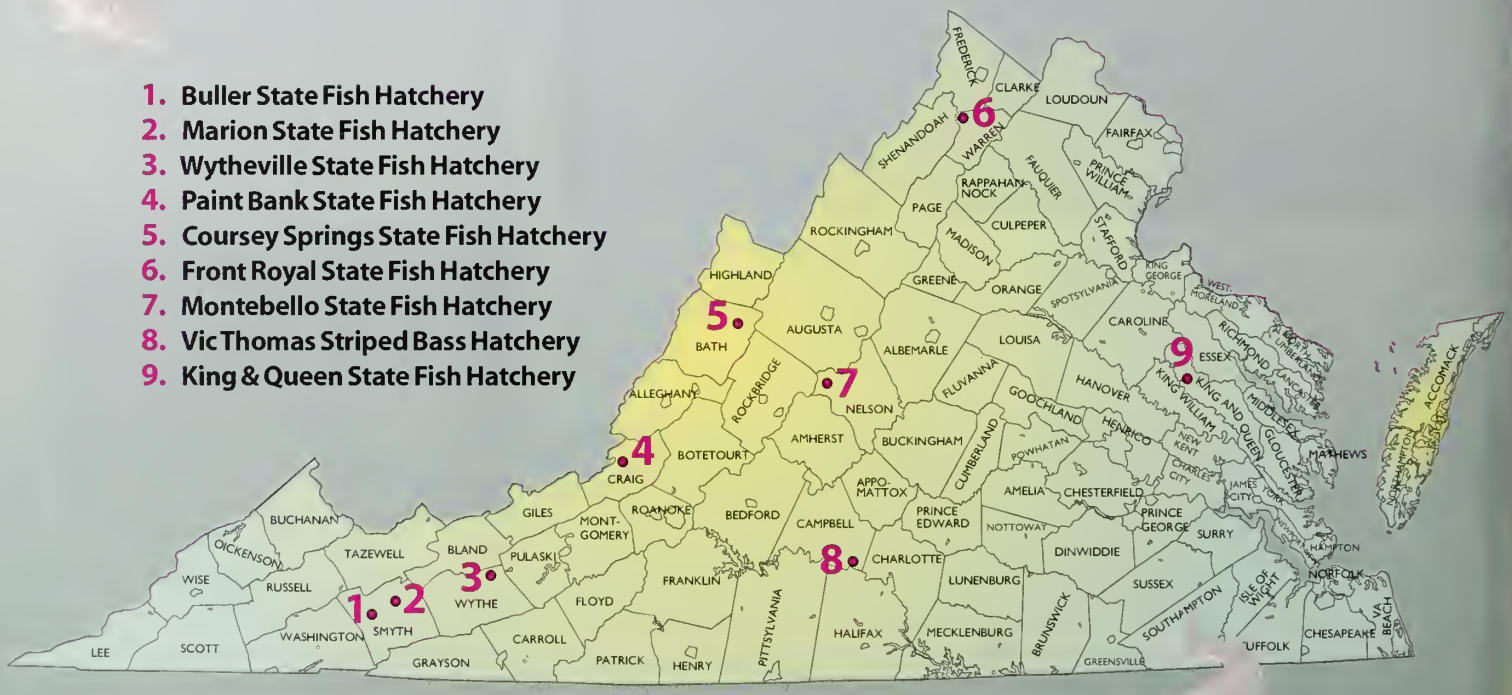
Dean Fowler is a Fisheries Outreach Biologist with the VDGIF and works in the Williamsburg Regional Office.

Species of Sport Fish Hatched and/or Raised Recently At Each Game Department Hatchery

Species	King & Queen	Front Royal	Vic Thomas	Buller	Montebello	Coursey Springs	Paint Bank	Wytheville	Marion
Bass, largemouth	✓	✓							
Bass, smallmouth				✓					
Bass, striped	✓		✓						
Bluegill	✓								
Chain pickerel		✓							
Muskellunge				✓					
Northern pike		✓		✓					
Shad, American	✓								
Sunfish, redear	✓								
Trout, brook					✓	✓	✓	✓	✓
Trout, brown					✓	✓	✓	✓	✓
Trout, rainbow				✓	✓	✓	✓	✓	✓
Walleye	✓	✓	✓	✓					

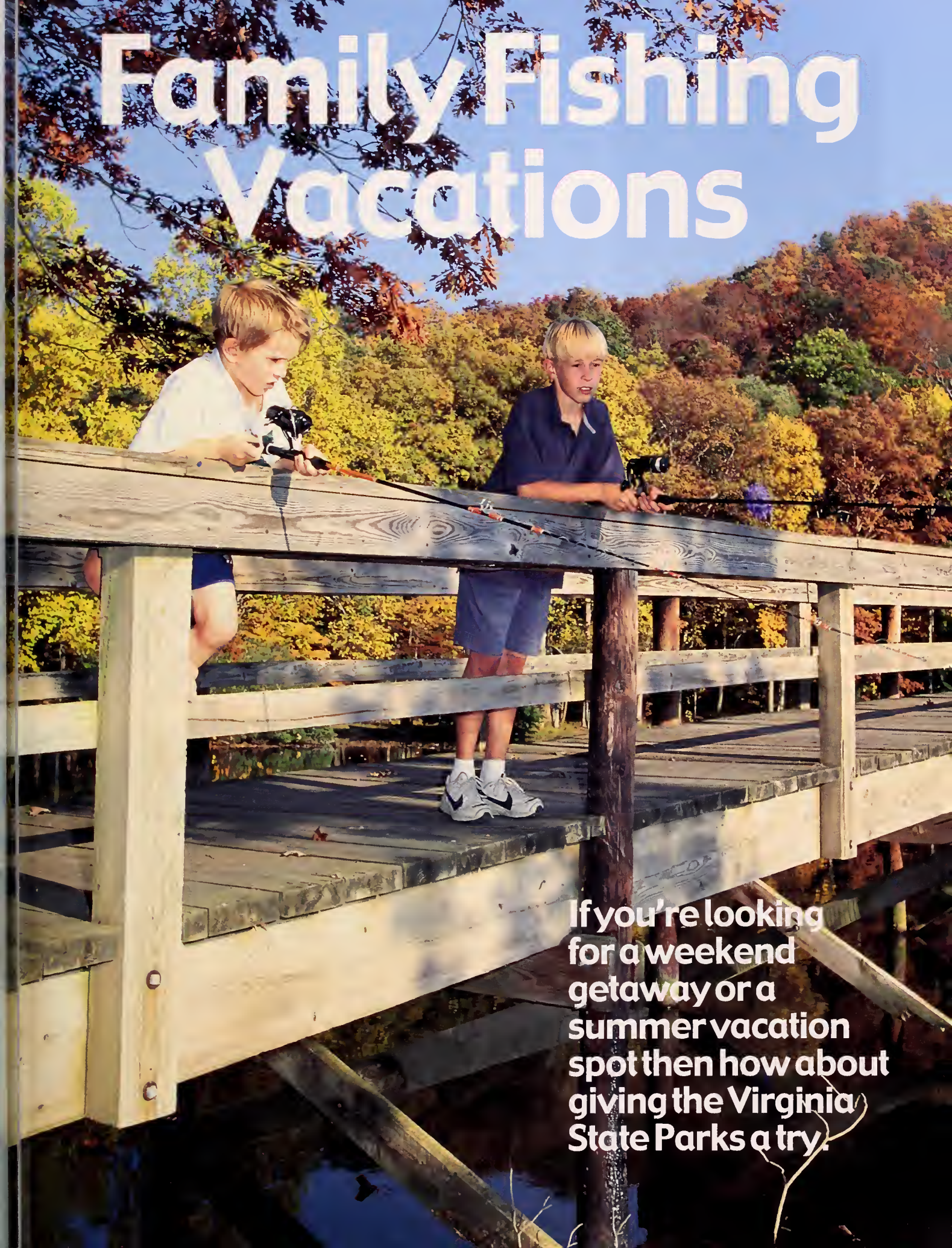
VDGIF Fish Hatcheries

1. Buller State Fish Hatchery
2. Marion State Fish Hatchery
3. Wytheville State Fish Hatchery
4. Paint Bank State Fish Hatchery
5. Coursey Springs State Fish Hatchery
6. Front Royal State Fish Hatchery
7. Montebello State Fish Hatchery
8. Vic Thomas Striped Bass Hatchery
9. King & Queen State Fish Hatchery



Virginia Department of Game & Inland Fisheries
4010 West Broad Street, P.O. Box 11104, Richmond, Virginia 23230-1104
(804) 367-1000 or visit our Web site at www.dgif.state.va.us

Family Fishing Vacations



If you're looking for a weekend getaway or a summer vacation spot then how about giving the Virginia State Parks a try.

©Dwight Dyke

Previous page and above: Nestled in the mountains of southwestern Virginia, Hungry Mother State Park is known for its beautiful woodland setting, placid 108-acre lake, and The Restaurant, which serves an array of delectable delights. The Park offers an impressive list of features including a sandy beach, handicapped accessible fishing pier, campgrounds, newly renovated cabins, and a visitor's center. Photos ©Dwight Dyke.

by Bob Gooch

From my perch high on the lifeguard stand at First Landing/Seashore State Park I watched with interest as a man wearing shorts and a light shirt crossed the broad, sandy beach and entered the water just above the major concentration of swimmers. He was carrying a light, bait-casting rod and a shoulder bag, which I assumed contained a minimum of tackle and possibly some bait. He waded out beyond most of the swimming activity and began fishing, making arching casts well out into the broad Chesapeake Bay.

It was a busy day at the beach and my responsibility was the concentration of swimmers of all ages and a great variety of skills. They consumed my undivided attention, but from time to time I glanced at the angler working his way down the beach. He was busy, fishing hard, and frequently landed a fish. An hour or so later he left with a full stringer of fish. Nothing big but good pan-sized fish, mostly croaker and spot was my guess, but I didn't get a chance to visit with him. No doubt a father and husband camping with his family in the state park and taking advantage of a unique fishing opportunity.

Years later—many years later—I was camping with my own family in Douthat State Park, far across the state from Seashore, in the rugged Allegheny Mountains, and one of our favorites when our children were growing up. We were booked for a week's stay and had a delightful campsite right on the shores of Douthat Lake. The entrance to the popular campground follows Wilson Creek; as we traveled it a number of good pools caught my eye, especially one in particular. I had an idea that pool might hold a good chain pickerel, fish that are reasonably abundant in the nearby Cowpasture River which flows into Wilson Creek. Early one morning, while my family was sleeping soundly, I sneaked out of camp and drove down to the pool. Easing quietly up to it, I dropped a small surface lure on the sparkling water, let it rest a minute, flicked it gently, and was rewarded with a vicious strike. No fish is more exciting to catch on a topwater lure than the chain pickerel. Douthat Lake itself produces some big chain pickerel, as well as bass and panfish. Family campers best know it, however, for its trout fishing. It is stocked twice weekly during the long vacation season.

Avid anglers are often faced with a dilemma. Many are family men or women, torn between using their precious and somewhat limited vacation time for a trip to a favorite fishing camp or spending that time

with the family. Usually the family wins out. But there's an answer to that. Camp in one of Virginia's many state parks, or rent a cabin. Often there is good fishing within the park boundaries, if not, there are sure to be some good choices nearby. First Landing/Seashore and Douthat State Parks are just a few of the more than two dozen such possibilities. Many state parks offer other outdoor activities, something that will appeal to the non-fishing members of the family. In the sprawling state park system that stretches from the Atlantic Ocean to the far Southwest Virginia, the family seeking a vacation spot will find biking, boating, camping, hiking, nature watching, swimming, and other activities.

In most cases the fishing is free. All that is needed is a Virginia state fishing license and a trout stamp if

©Bob Gooch

fishing a designated trout stream. In Douthat there is a modest daily fee to help defray the cost of the introduced, hatchery-reared trout.

My own experiences include fishing Claytor Lake from Claytor Lake State Park, the broad Potomac River for white perch from the beach at Westmoreland State Park, bass and panfish from the pair of small lakes in Twin Lakes State Park; bass, panfish, and chain pickerel in the lake in Bear Creek Lake State Park; bass, panfish, chain pickerel, and northern pike in Holliday Lake in Holliday Lake State Park; a variety of fish in popular Smith Mountain Lake from the state park by the same name; big Buggs Island Lake from the Staunton River State Park, and Lake Anna from the Lake Anna State Park. My grandson Ben caught his first walleye when he, his father, and I were fishing Hungry Mother State Park, while most of our family was relaxing back at a park cabin.

I am sure I have fished or visited other state park waters, but the above come most quickly to mind. A number of the state parks that have easy access to lakes of various sizes offer rental boats and canoes. The state parks offer something for every angler. Is saltwater fishing your thing? Then take a look at First Landing/Seashore State Park on the lower Chesapeake Bay or False Cape State Park on the Atlantic Ocean. An angler can fish from the surf in either park. Kiptopeke State Park, near the tip of the Eastern Shore, offers fishing access to the eastern side of the Chesapeake Bay.

Or maybe freshwater is your choice. How about Occoneeche or Staunton River State Parks on 50,000-acre Buggs Island Lake. Fairy Stone State Park with access to Philpott Lake, Smith Mountain State Park on the lake of the same name, and Lake Anna State Park on 10,000-acre Lake Anna. All of these state parks have boat-launching ramps.

Stream fishing is one of my favorites, and I plan to take a look at the new James River State Park on the James River, one of the best smallmouth streams in America. Several miles of the river skirt the park and offer public access to this popular fishing stream. The New River vies with the James for being one of the best smallmouth streams in Virginia. The 57-mile long New River State Park parallels 39 miles of this popular river offering access to much of it. Belle Isle State Park offers access to the Rappahannock River, and the York River State Park to the York River.

That's a quick look at the fishing possibilities in Virginia's sprawling system of state parks. For more detailed information contact the Virginia Department of Conservation and Recreation, 203 Governor Street, Suite 306, Richmond, VA 23231, telephone 804-771-2883, or go on-line www.state.va.us/~dcr/.

Bob Gooch has been writing about Virginia's great outdoors for over 40 years and is a regular contributor to Virginia Wildlife *magazine.*

©Dwight Dyke

Right: Named for Native Americans who lived in the area hundreds of years ago, Occoneechee State Park is located at Kerr Reservoir (Buggs Island). It offers great fishing opportunities, as this young angler can attest to, and is the perfect place to treat your family to an outdoor vacation. Opposite page: Holliday Lake State Park near Appomattox.

Journal

VDGIF 2002 Calendar of Events

August 2–4: *Mother & Daughter Outdoors*, Holiday Lake 4-H Educational Center, Appomattox, Va. For information call (804) 367-6351.

September 7: *Women in the Outdoors*, Izaak Walton League, Centreville, Va. For information, contact Linda Layser at (703) 425-6665 or rglayser@msn.com.

September 13-15: *Wilderness Survival Weekend for Women*, Lake Robertson, Lexington, Va. For information call (804) 367-6351.

September 21: *Virginia Outdoors Day*, Belle Isle State Park, Warsaw, Va. For information call (804) 367-6351. □

Virginia Outdoor Writers Association Announces Contest Winners

Winners for the Virginia Outdoor Writers Association Inc. (VOWA) Youth Writing Competition and Excellence in Craft contest for members were announced at the group's Spring Business and Awards Luncheon at the Virginia Department of Forestry March 20, 2002.

The theme for the contest was "My Most Memorable Outdoor Experience." First place in the youth contest went to Amy Jessee, 17, Wytheville, (George Wythe High School), with her article entitled "A Hunting We Will Go." Second place went to Matthew Robert Craig, 17, Louisa, (Orange County High School), with third place going to Hannah Fisher, 15, Earlysville (Albemarle High School).

Each winner received a plaque, funded by Dominion Resources. Miss Jessee also received a 7 X 9 Dome Tent donated by the Colemen Company, Wichita, Ks.; Mr. Craig was awarded a pair of binoculars from Bushnell Sports Optics, Overland, Ks. and Miss Fisher received a Seamlock Backpack from the U.S. Bureau of Land Management. The winners along with their families were treated to lunch.

The 2002-2003 Youth Contest theme will be announced November 1, 2002 with a deadline of February 1, 2003. The contest is open to all Virginia students from grades 9–12. For more information, contact Sally Mills, Route 1, Box 59, Walkerton, VA 23177, 804-769-0047 (evening), or 804-684-7167 (day). E-mail: mills@vims.edu.

The member Excellence in Craft contest winners by category were:

Best Article

1. David Hart, Centerville, for "A Partner for Life," which appeared in *Wildlife of North Carolina*.
2. Chris McCotter, Mineral, for "Fishing the Shenandoah," *Woods and Waters* magazine.
3. Ralph McDowell, Nokesville, "Taking Wing in North Carolina," in *Wildfowl Magazine*.

Best Column

1. Curtis Badger, Onancock, for "A Fly Rod Turns Even a Croaker-Choked Fishing Hole into a Challenge," in the *Virginian-Pilot*.
2. King Montgomery, Burke, "Ode to Bluegill," in *Fly Fish America*.
3. Mark Fike, King George, for "A Turkey Hunter's Reason," in *The Journal* (King George).

Best Photo/Art Essay

1. Lynda Richardson, Richmond, for "Snake Cane Man," in *Virginia Wildlife* magazine.
2. King Montgomery, Burke, for "Room for All," in *Virginia Wildlife* magazine.
3. Mark Fike, King George, for "Summertime Photo Essay," in *The Journal* (King George).

Best Photo

1. Lynda Richardson, Richmond, "Tunnel Vision," *Smithsonian* magazine.
2. King Montgomery, Burke, "Canoe on Riverbank," *Outdoor Writers Association Newsletter*.

Open

1. Curtis Badger, Onancock, *Nature Conservancy Journal* newsletter.
2. Bill Cochran, Catawba, Web site www.billcochran.com.
3. Nancy Sorrells, Greenville, *Native Plant Society Newsletter*.

The first place winners in each category received a $75 cash prize sponsored by Dominion Resources, as well as merchandise from the Coleman Company, Wichita Ks.; Bushnell Sports Optics, Overland, Ks.; Pure Fishing Communications (Abu-Garcia/ Berkeley/ Johnson), Spirit Lake, Ia.; Shakespeare Fishing Tackle, Columbia. SC; Buck Knives, El Cajon, Ca.; U.S. Bureau of Land Management and others.

The Virginia Outdoor Writers Association, Inc. has been in existence since 1963. Its first president was Max Ailor, deceased, long time and respected outdoor editor of the

Richmond Times-Dispatch. Presently there are 54 individual members including writers, photographers, artists, videographers, web masters, newsletter editors, public relations specialists, and public affairs and information officers from state and federal governments. The group has eight corporate members and two sponsor members as well. □

A Hunting We Will Go

by Amy Jessee

Dad dressed in his camouflage. His legs became tree bark and leaves. His jacket was a different pattern of green, brown, and black. Even his waterproof boots matched the terrain they would soon be treading on. He put on his bright orange hat and vest to calm Mom's fears. Her husband and daughter were going hunting, and she wanted to be sure that they were safe.

"But the deer will see us, Mom," I protested against the bright orange hat. "All the animals will run away!"

Dad explained to my eight-year-old mind that the deer were colorblind to the orange color. We wouldn't have to worry about them being scared away. But he was wrong, or maybe he knew all along that he wouldn't see any deer that day.

I was dressed in my own camouflage, for a normal day of school. I had on a pair of jeans, thick winter coat, and a colorful toboggan with a pompom on top. I assumed [that] if the deer couldn't see the bright orange my colorful outfit was also out of their vision. The best part was that I finally would find out if my new pink waterproof boots were truly waterproof. As soon as I found the nearest mud puddle my boots would be camouflage too.

Mom packed sandwiches for us to take on our trip. "Just in case the mighty hunters didn't kill anything for lunch," she said. We jumped in the truck and headed for the woods. Once there, we packed up our various calls and binoculars and started walking on a trail.

I tried to be as quiet as I could, but with every step I took, leaves would crackle or a twig would snap under my shoe. Dad decided that it would be better if I tried making noise with the calls instead of my feet. I tried to master the turkey call, but my bird sounded like it had already been cooked for Thanksgiving dinner. I was an excellent duck caller, but I doubt that a beautiful mallard would have flown into the middle of the gigantic forest; although, now that I'm older the forest has shrunk, but the memory has only grown in my mind.

I contented myself with a pair of plastic deer antlers and the binoculars. I would fight with the antlers for a few seconds, and then snatch up the binoculars to see what big buck I had attracted. Even from atop my perch on the log pile, I never saw any game come, not even a squirrel.

It wasn't long before I became bored and hungry. After a short hunt I found Dad sitting under a tree with a pile of nuts. By this time we had realized that the lunches were still in the truck, and as I look back I think the gun might have been accidentally left with them. We snacked on the nuts, breaking them between two rocks. Now, this was roughing it I thought; we were living on the land.

The snack didn't sustain my growling stomach, and we headed back to the truck, a trek that seemed like miles. The time flew by as I flew through the forest on grapevines and our hunting trip was over without anything to show for it.

As we stepped into the clean kitchen with our muddy boots, Mom asked, "What did you bring home?"

Dad didn't have to answer. My smile was enough of a reply. □

Amy Jessee was first place winner of the 9th Annual Youth Writing Contest, sponsored by the Virginia Outdoor Writers Association, Inc. She is 17 and a senior at George Wythe High School, Wytheville, Va.

Report Wildlife Violations
1-800-237-5712

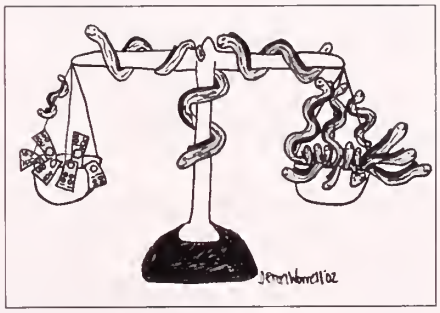
AROUND THE CAMPFIRE

A Slippery Business

by Jennifer Worrell

Game wardens find that some people will take just about any type of wildlife, if unchecked. James Pritchard and Lannie Chitwood tell the story of a ring of eel smugglers that stretched along the entire East Coast and all the way to Asia where these animals are considered a culinary delicacy. Regardless of their taste, these young eels are a vital food source for bass and other fish, and they rely on the tidal rivers along the East Coast for breeding and reproduction.

Officials from the Virginia Department of Game and Inland Fisheries (VDGIF) received a letter stating that a group of people were harvesting and selling eels illegally near Southampton County. Acting on the tip, Pritchard began patrolling after dark along several of the tidal creeks around area, and he found a net set across the Western Branch of the Nansemond River. With assistance from several other VDGIF wardens,



an intensive surveillance effort began that eventually lead to multiple arrests and seizures of personal property. Included in the seizure were cell phones, which traced the perpetrators' calls back to a local man aerating four to five kilos of eels behind his house. As eels sell for $300-$400 per kilo, the illegal eel trade proved rather lucrative.

The VDGIF wardens watched the man for quite a while and finally videotaped him selling the eels (in

boxes marked with false labels) to another man in the parking lot of a local fast food restaurant. They followed the perpetrators for several hours after the sale, to North Carolina. They were able to trace these men to the ringleader in southern North Carolina. Federal agents from U.S. Fish and Wildlife handled the case across state lines, and people from as far north as New England were arrested.

The Department, along with other agencies, worked on this case for two years, and they stopped the ring of poachers. Pritchard noted that they had learned a lot about this unusual method of poaching wildlife, and that the experience will help them to continue in their efforts to protect Virginia's natural and wildlife resources. □

Left to right: William L. Woodfin, Director VDGIF; Sandy Morgan Spencer; Captain Terry Bradberry, Outdoor Education Manager; Danny Baretee; and Lieutenant Patrick Popek.

Morgan Memorial Award Given to Danny Bartee

by Julia Dixon Smith

The Virginia Department of Game and Inland Fisheries (VDGIF) announced that Danny Bartee of Pittsylvania County has been awarded the William D. Morgan Memorial Award for 2002. The W.D. Morgan Award is administered by VDGIF and supported by a trust fund established by Mr. and Mrs. William Morgan of Madison Heights in memory of their son, who was killed in a hunting accident in 1983. The Award was created to recognize the person who has made an outstanding contribution to the Hunter Safety program during the year.

Danny Bartee certainly meets and exceeds that standard. Bartee received his Hunter Education certification in 1995, and has trained more than 2,000 students and volunteered more than 2,200 hours of his time since then. As a county coordinator, Bartee has been instrumental in scheduling classes, instructing, and conducting range training exercises. In nominating him, VDGIF Lieutenant Patrick Popek described Bartee as having been "a gentleman who simply hit the ground running since becoming a Hunter Education instructor nearly seven years ago." Popek went on to say, "Danny ensures that the job is done efficiently and professionally. It's not uncommon for him to be the first to arrive and the last to leave."

Danny Bartee has proven himself to be one of the Department's core volunteers, teaching at Advanced Hunter Education Training sessions as well as other Department-sponsored activities across the state. He has volunteered at the VDGIF women and family outdoors programs, 4-H shooting sports activities and camps, Boy Scouts activities, National Wild Turkey Federation Jakes events and many, many more.

Said Captain Terry Bradbery who oversees the Department of Game and Inland Fisheries' Outdoor Education programs, "Our people make a difference in so many lives by passing on not just outdoor skills and sportsmanship, but the importance of individual responsibility and safety. Danny Bartee's dedication to natural resource related recreation makes him a role model for his fellow instructors, our staff, and to all the students he instructs." □

Russell County Fair

Each year wardens work cooperatively with the Russell County Fair Association to put on an exhibit for the Russell County Fair and Horse Show. For the past three years the Russell County Fair has been selected by the Virginia Fair Association as the "County Fair of the Year" for fairs with attendance of 30,000 and under. Dave Leonard of Lebanon has served as the President of the association for the past nine years and is the immediate Past President for the Virginia Fair Association. Jane Thornhill, also of Lebanon, is the Vice President of Operations and the Co-Chair Person for the commercial exhibits.

With the close working relationship developed with Jane, wardens have been able to conduct exhibits to promote the mission of the Virginia Department of Game and Inland Fisheries (VDGIF). Last year there were approximately 29,000 people in attendance at the weeklong event. Lieutenant Bill Rose, Lieutenant Harry Street, Sergeant Bobby Riggs, and Game Wardens Ricky Salyers and Troy Phillips put together an outdoor theme exhibit. The exhibit was decorated with camouflage material provided by Jim Crumley of Treebark and wildlife animal mounts. Included in the exhibit was a hunting simulator, archery range, a computer to surf the VDGIF Web site, a penny stamp machine, and a boating safety display. For game wardens, this event provides an excellent opportunity to interact with the public and with people who have a wide range of outdoor interests.

This year's fair will run from August 30-September 7, 2002. For more information call (276) 889-4252 or visit the official Web site at www.russellcountyfair.com. □

Corrections

The cover photograph in the June 2002 issue of *Virginia Wildlife* was misidentified. The fish pictured is a channel catfish *(Ictalurus punctatus)*. In the article *A Tale of Two Shad & an "Old Trout"* in the May 2002 issue, credit for much of the funding for the American shad restoration efforts should have read Virginia Marine Resources Commission (VMRC). We regret the errors. □

What is That?

by Dean Fowler
Fisheries Outreach Specialist

With one look at the proud smile on his face, it's not hard to figure out why Roshaun Thomas, of Virginia Beach, is thrilled to share his noteworthy catch with *Virginia Wildlife* magazine. Or is it? Better yet, WHAT is it? It's a bowfin or "grindle," as they're commonly called, and pound for pound they rank right up there with the most powerful freshwater sport fish on the planet.

In Virginia, this toothy, prehistoric creature is most abundant near the shorelines and aquatic plant beds of lowland swamps, rivers, and lakes east of I-95. Bowfin are very aggressive predators, and though they feed mostly on fish, their large mouths allow them to feed on a wide range of prey including frogs, snakes, and even young turtles. Because they're not finicky eaters, they can be caught relatively easily using just about any kind of artificial or natural bait, but live shiners are hard to beat. When fishing for bowfin, hold on tight to your rod because this is no diminutive, freshwater fish.

Roshaun Thomas loves to be around the water and fishes whenever possible; he caught this fine bowfin on March 31, 2001, at North Landing River in Virginia Beach. It measured 24 inches, and weighed 6 pounds.

The current world record is over 21 pounds! Virginia's state record category for bowfin is currently vacant, and has been since 1985, when the record program was revised. Currently, a bowfin weighing at least 15 pounds is required to qualify for the state record. This is not unattainable given that Virginia's historical record (the record that existed prior to 1985) is 17 pounds 8 ounces.

The best places to catch huge bowfin are Chickahominy Lake in New Kent & Charles City Counties, Diascund Reservoir in James City and New Kent Counties, and Lake Cohoon in the City of Suffolk. In addition to many of the lakes and nontidal rivers east of I-95, bowfin are also abundant in the tidal freshwaters of the James, Chickahominy, Mattaponi, Pamunkey, and Rappahannock Rivers, as well as Dragon Run and North Landing Rivers. Though they don't make the best table fare, you'll be hard pressed to find a freshwater fish that's easier to catch and fights any harder than bowfin. □

Bowfin illustration by Spike Knuth

On The Water

by Jim Crosby, Region 4 Boater Education Coordinator

Muscle Powered Boats are Fun and Popular

Muscle powered boats are very popular with conservationists and offer a great form of exercise, making the combination a healthy and rewarding activity. Naturalists prefer the canoe because they allow a quiet means of transportation to observe nature without scaring it away. A skilled canoeist can slip through the water without the slightest sound to sneak up on those swimming, crawling, or flying creatures worthy of observation.

Canoeing or kayaking is one of the least expensive and easiest water sports to get into and for that very reason, one of the most dangerous. For example, you can purchase a complete canoeing or kayaking package at the local buyer's club for the price of a new couch and haul it off to the water in the back of your station wagon or on the rooftop of your car. While the kit is packed with safety information, who bothers to read it before they launch?

One day I was picknicking in a county park next to a launch ramp when I noticed a young family with two small children put their canoe in the water. I watched carefully to see if they had any life jackets. None appeared, so I wandered over to engage them in idle conversation and get a closer look. I opened the conversation with, "Nice canoe. You all do much canoeing?"

The answer came back, "No, we just bought this from a family in our neighborhood."

I noticed the 16-foot canoe had registration numbers on the bow, so

©Dwight Dyke

I asked, "Have you changed the registration yet?'

"No, we don't know anything about that."

I responded, "The canoe was probably used with an electric motor and therefore had to be titled and registered. The problem for you is that once it has been titled, registered and assigned bow numbers, you will have to file a change of ownership and apply for a new title and registration."

"Wow, I didn't know anything about those requirements."

"The law allows you to operate your used watercraft for 30 days from the date of purchase with a dated bill of sale and the valid Certificate of Number of the former owner."

"All that for a $100 canoe. I didn't get anything from the former owner. I guess I need to go back to him and get that paperwork."

"Gosh, I hope I haven't brought up something that has ruined your day on the water, but I would hate to see you get a citation for operating illegally. On another point, I haven't seen any life vests. Do you have life preservers for yourself and your children?"

"No! We have these seat cushions that the guy gave us."

"They may have been legal when he used the canoe but today, you must have a U.S. Coast Guard approved wearable PFD (personal flotation device) for everyone in the vessel on the water."

"I guess I didn't know that either. Where can I find out about all this stuff?"

"Well, I have an extra copy of the current Virginia Watercraft Owner's Guide that covers all of the safety and legal requirements for boat operator's in Virginia. You're welcome to it."

"Thank you very much. I'm very grateful you happened to come along." He turned to the family and said, "I guess we'd better load up and go home. We've got to get legal and we've got to start with our neighbor who sold us the boat!" □

A Canoe or Kayak Skill Challenge

Place two floats (milk jugs tied to a sinker) about three lengths of your vessel apart in an open area. Take the stern seat, or seat toward the back, and paddle your canoe around the two floats to make a figure eight. When you can do this in a smooth and steady pattern, you are an accomplished canoeist.

RECIPES

by Joan Cone

Emergency Foods for the Outdoors

Anything that can go wrong, might go wrong! This could happen while fishing, hunting, canoeing, motor boating, hiking, or wilderness camping. You would then need emergency rations to tide you over until help arrives.

That is why you should always carry a standby food supply. These foods should keep well, be lightweight and compact, and provide a high level of energy.

Emergency Foods
Venison Jerky
Wild Goose Jerky
Fruit Leathers

Venison Jerky

1 to 2 pounds venison steak
½ cup soy sauce
Garlic salt

Slice steak with grain into pieces no larger than ¼-inch wide and ½-inch thick. These strips can be 3 to 4 inches long. Dip them in soy sauce and place upon a rack in a 2-inch deep oven pan. Sprinkle generously with garlic salt. Place in a 150° oven or convection oven for 10 to 12 hours. Halfway through cooking time, turn jerky slices over. Your jerky, if kept dry, will last indefinitely, and no refrigeration is needed.

* Wild Goose Jerky
(For smoker)

Marinade:
2 cups cold water
1 can (5.5 ounces) spicy vegetable juice
¼ cup soy sauce
¼ cup Worcestershire sauce
1 to 2 tablespoons Morton TenderQuick mix
2 teaspoons onion powder
½ teaspoon garlic powder
½ teaspoon ground ginger

2 pounds boneless skinless goose meat, cut into 4 x 1 x ¼-inch strips
Hickory wood chips

In large, nonmetallic bowl or sealable plastic bag, combine marinade ingredients. Stir to dissolve TenderQuick mix. Add goose strips, stirring to coat. Cover with plastic wrap or seal bag. Refrigerate 24 hours, stirring or turning bag occasionally.

Soak wood chips in warm water for 30 minutes; drain. Heat smoker to 120° F. Spray smoker racks with nonstick vegetable spray. Drain and discard marinade from goose strips. Pat strips lightly with paper towels. Arrange strips at least ¼-inch apart on prepared racks. Place racks in smoker. Place a handful of wood chips in smoker. Smoke goose strips for 3 to 6 hours or until jerky is dry but not brittle, adding wood chips as necessary and keeping smoker temperature at 120° F. Cool jerky completely. Store jerky, loosely wrapped, in refrigerator for 1 week or wrap tightly and freeze up to 2 months.

Fruit Leathers

Fruit leather is fruit puree spread out and dried to a pliable, nonsticky state. It is easy to carry and eat. Almost any type of fruit can be used: apricots, apples, bananas, grapes, berries, pears, peaches, and plums.

Preparation:

Select ripe or overripe fruit. Seeds of berries or grapes need not be removed. Peel or not, depending upon individual preference. Cut fruit into chunks and place it in a food chopper or blender. To yellow or light-colored fruit, add 1 tablespoon of lemon or lime juice for each quart of fruit. Chop, grind or blend until thick puree is formed. Line a cookie sheet or similar flat tray with saran or waxed paper. Make sure that the cookie sheet or tray has an edge to prevent spillage of the puree. Pour the puree onto the sheet or tray about ¼-inch deep. Distribute evenly by tilting the tray. Do not use a spatula or knife. When all spaces are covered, the right amount of puree has been applied.

Oven Drying:

Set oven at lowest setting (140° F.). Place the sheets or trays in the oven and leave the oven door cracked open 2 to 6 inches, depending on the oven door. The fruit leather will be dried in 4 to 5 hours.

Properly dried fruit leather will be sticky to the touch, but will be easily peeled from the saran or waxed paper. Lift the edge, which will adhere tightly to the surface, and peel it back about an inch. If it peels readily, it is properly dried.

When dried, roll the saran or waxed paper and the dried leather in one piece in a loose roll. The dried fruit roll can be stored for years in the freezer, for months in the refrigerator and for up to 30 weeks at room temperature (70° F. or less). □

*Recipe from *Game Bird Cookery*, published by Cowles Creative Publishing, Inc.,1997, Minnetonka, MN.

VIRGINIA AGRICULTURE
Virginia's Finest

Wild Backyard

story and photos by Marlene A. Condon

Accepting Caterpillars

Caterpillars are probably almost as despised as snakes in the gardener's plot. Although humans seem to have an innate fear of predatory animals, especially snakes, their fear of caterpillars stems from the misperception that caterpillars eat a gardener out of house and home. In the yard that is landscaped properly for wildlife, however, this assertion is not true.

Caterpillars are the larvae of butterflies and moths. Most of them chew the leaves of plants to get the nutrition they need to fuel their growth and reach maturity. If all of our yards were "natural" areas, there would be a variety of plants and numerous specimens of each kind of plant for a female moth or butterfly to lay her eggs on. She would choose to place only a few eggs on each plant so that there would be plenty of food for her offspring. These few caterpillars would not seriously harm their host plant so that it could flower and reproduce for the next generation of caterpillars.

But in the typical human's yard, there is a clump of plants here and a different kind of clump of plants there, with each group containing very few plants. A female looking for a particular kind of plant to lay her eggs on (many species of caterpillars are plant-specific) might have very few plants to choose from in the typical suburban landscape. Out of desperation, she will have to lay her vast quantity of eggs on too few plants, thus causing severe damage to the plant and the possible starvation of the caterpillars.

So try to grow as many individuals of the same variety of plant as possible. Then female moths and butterflies will lay very few eggs per plant and their caterpillars will not do any serious harm. If you can not grow a large number of plants, it is still not wise to kill caterpillars if there are only a few, especially if you have not identified them. Plants have evolved to sustain some insect "damage," and you should avoid depriving yourself of the future pleasure of viewing some of the loveliest winged creatures on Earth.

The caterpillar of the black swallowtail is often found on garden parsley. So grow extra plants.

The caterpillar of the red admiral butterfly can be found on false nettle. So grow this plant in order to see the adults.

The saddleback caterpillar is the larva of a moth. Look but don't touch.

Naturally Wild

story and illustration
by Spike Knuth

Black-Crowned Night Heron

If you live near a marsh, swamp, river, pond, or even a subdivision lake close by, you have probably heard or seen a black-crowned night heron. Usually you'll see them right at dusk, flying with slow to medium wing beats, often uttering a "quonk" or "squawk" call. In fact, those are two of its nicknames!

They spend much of the day roosting, sleeping, and loafing in low-growing shrubs or in the marshes. Although they are not strictly nocturnal, they mostly get active just at dark, going to some watery feeding grounds to feed on small fish, crayfish, crabs, frogs, small rodents, and aquatic insects. The night heron feeds in tidal creeks, pond-edges, river edges, swamps, and in salt, brackish, or freshwater marshes. When occasionally seen hunting in daylight, it is a very patient hunter. It will sit, statue-like, motionless for many minutes, staring and waiting for a fish or frog. When it does move it strikes out quickly at its prey.

They measure about two feet long—looking stockier than other herons—especially because they stand up with neck rolled up, giving them a hunch-backed appearance. The bill of a night heron is a bit thicker and shorter and it stands on shorter legs then some of the others. It's basically black and ashy-gray above, white below. It has a black crown and black wing markings. In its breeding plumage, it has a few long plumes from its crown down its back. Its eyes are bright red. The young are grayish brown with white spotting. The young of the yellow crowned night heron are similar but the adults are different, showing more black and a light yellow crown.

They nest in colonies, usually in low trees and shrubs like wax myrtle and marsh elder, or even on the ground on a raised area—a small hammock. The nest is a loose affair of sticks, twigs, reeds, and grasses. They may raise two broods. Three to six eggs are laid and incubation takes 24–26 days. Eggs are laid over a period of time so some hatch before others, resulting in a considerable size difference of the young in a single nest.

The scraggly looking young have long, hairy-like plumage and piercing yellow eyes. The youngest and smallest are sometimes pecked to death or pushed out of the nest. Often they have to climb around in the trees using feet, wings, bill, and head. Those that fall all the way down end up as food for raccoons, snakes, opossums, and snapping turtles.

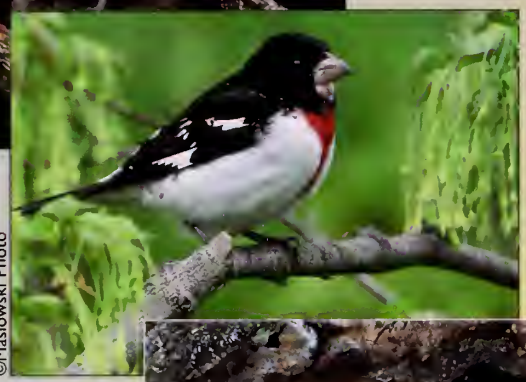
Once able to fly, young-of-the-year and adults scatter in all directions, many going north for hundreds of miles, others going west and some south. Black-crowned night herons migrate south in early October—often in large groups in goose-like "V" formations. □

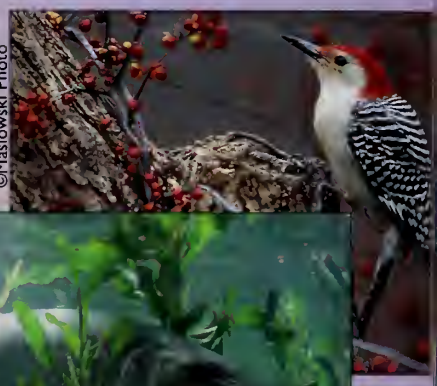
Just Arrived!

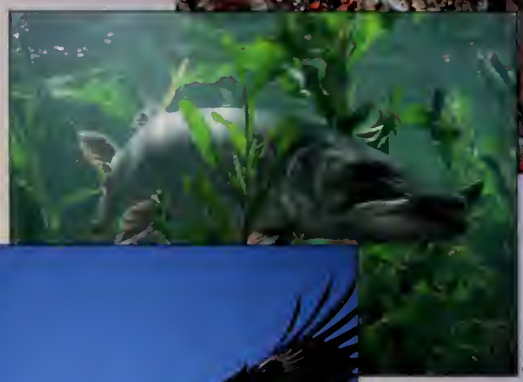
The 2002-2003

©Maslowski Photo

©Maslowski Photo


©Maslowski Photo


©Maslowski Photo


©Bill Lindner

©Joe McDonald

©Rob & Ann Simpson

Isn't it time you started enjoying the great outdoors and viewing Virginia's abundant wildlife? There is no better way to get started than by purchasing the new 2002-2003 Virginia Wildlife Calendar. This full-color, nationally award-winning calendar offers a little something for everyone. Each month you will find information about the moon phases, sunrise-sunset, the best days to go fishing, prime times for viewing wildlife, and fun facts about the outdoors.

Virginia Wildlife Calendar

The Virginia Wildlife Calendar is produced by the Virginia Department of Game and Inland Fisheries, and customers are reminded that the 2002-2003 Wildlife Calendar starts in September and runs through August. Quantities are limited so order NOW.

At only $6.50 each, the Virginia Wildlife Calendar is perfect for your home, office, or as a gift to family or friends. Make your check payable to: Treasurer of Virginia and send to Virginia Wildlife Calendar, VDGIF, P.O. Box 11104, Richmond, VA 23230-1104. For additional ordering information or questions please call (804) 367-2752. Please allow 4-6 weeks for delivery.

Virginia Wildlife Magazine subscription calls only 1-800-710-9369
Twelve issues for $10.00!
All other calls to (804) 367-1000
Visit our Web site at www.dgif.state.va.us